| | created by the STIC Systems Branch CRF Processing Date 2/21/91 CRF Processing Date 2/21/91 |
|---|---|
| • | Changed a fil from non-ASCII to ASCII Changed a fil from non-ASCII to ASCII |
| | Changed the margins in cases where the sequence text was "wrapped" down to the next line. |
| | Edited a format error in the Current Application Data section, specifically: |
| | Edited the Current Application Data section with the actual current number. The number inputted by the applicant was the prior application data; or other |
| • | Added the mandatory heading and subheadings for "Current Application Data". |
| | Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integ r. |
| (| Changed the spelling of a mandatory field (the headings or subheadings), specifically: |
| | Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: |
| | nserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: |
| 3 | Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place. Inserted colons after headings/subheadings. Headings edited included: |
| | Deleted extra invalid, headings used by an applicant, specifically: |
| | Deleted: non-ASCII "garbage" at the beginning/end of files; secretary initials/filename at end of fi page numbers throughout text; other invalid text, such as |
| | Inserted mandatory headings, specifically: |
| | Corrected an obvious error in the response, specifically: |
| | Edited identifiers where upper case is used but lower case is required, or vice versa. |
| | Corrected an error in the Number of Sequences field, specifically: |
| | A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted. |
| | Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (erro |
| | |

*Examin r: Th abov corrections must b communicated to the applicant in the first Offic Action. DO NOT s nd a copy of this form.

RAW SEQUENCE LISTING PATENT APPLICATION US/08/785,455

DATE: 02/21/97 TIME: 15:30:00

INPUT SET: S15668.raw

This Raw Listing contains the General Information Section and up to the first 5 pages.

```
SEQUENCE LISTING
        1
                                                                        Does Not Comply
                                                                   Corrected Diskette Needed
        2
                    General Information
        3
            (1)
        5
                     (i) APPLICANT
        6
                       (A) NAME: Hodgson, John
                       (B) STREET: Great West Road
        7
        8
                       (C) CITY: Brentford
                       (D) STATE OR PROVINCE: Middlesex
        9
       10
                       (E) COUNTRY: United Kingdom
       11
                       (F) POSTAL CODE: TW8 9EP
       12
       13
            *APPLICANT
       14
                       (A) NAME: Hodgson, John
                       (B) STREET: Great West Road
-->
       15
                       (C) CITY: Brentford
       16
       17
                       (D) STATE OR PROVINCE: Middlesex
-->
                       (E) COUNTRY: United Kingdom
       18
-->
       19
                       (F) POSTAL CODE: TW8 9EP
-->
       20
       21
                    (ii) TITLE OF THE INVENTION: Novel tRNA Synthetase
       22
       23
                    (iii) NUMBER OF SEQUENCES: 2
       24
       25
       26
                    (iv) COMPUTER-READABLE FORM:
       27
                      (A) MEDIUM TYPE: Diskette
                      (B) COMPUTER: IBM Compatible
       28
                      (C) OPERATING SYSTEM: DOS
       29
                      (D) SOFTWARE: FastSEQ for Windows Version 2.0
       30
       31
       32
                    (v) CURRENT APPLICATION DATA:
                      (A) APPLICATION NUMBER: (B) FILING PATE;
       33
       34
       35
                       (2) INFORMATION FOR SEQ ID NO:1:
       36
       37
                    (i) SEQUENCE CHARACTERISTICS:
       38
                      (A) LENGTH: 1974 base pairs
       39
                      (B) TYPE: nucleic acid
       40
                      (C) STRANDEDNESS: double
       41
                      (D) TOPOLOGY: linear
       42
       43
                    (ii) MOLECULE TYPE: Genomic DNA
       44
       45
                    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:
       46
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PAGE: 2

RAW SEQUENCE LISTING PATENT APPLICATION US/08/785,455

DATE: 02/21/97 TIME: 15:30:03

| | | | | | IN | PUT SET: S156 | 68.raw |
|----|------------|------------|------------|------------|------------|---------------|--------|
| 47 | ATGGCTAAAG | AAACATTTTA | TATAACAACC | CCAATATACT | ATCCTAGTGG | GAATTTACAT | 60 |
| 48 | ATAGGACATG | CATATTCTAC | AGTGGCTGGA | GATGTTATTG | CAAGATATAA | GAGAATGCAA | 120 |
| 49 | GGATATGATG | TTCGTTATTT | GACTGGAACG | GATGAACACG | GTCAAAAAAT | TCAAGAAAAA | 180 |
| 50 | GCTCAAAAAG | CTGGTAAGAC | AGAAATTGAA | TATTTGGATG | AGATGATTGC | TGGAATTAAA | 240 |
| 51 | CAATTGTGGG | CTAAGCTTGA | AATTTCAAAT | GATGATTTTA | TCAGAACAAC | TGAAGAACGT | 300 |
| 52 | CATAAACATG | TCGTTGAGCA | AGTGTTTGAA | CGTTTATTAA | AGCAAGGTGA | TATCTATTTA | 360 |
| 53 | GGTGAATATG | AAGGTTGGTA | TTCTGTTCCG | GATGAAACAT | ACTATACAGA | GTCACAATTA | 420 |
| 54 | GTAGACCCAC | AATACGAAAA | CGGTAAAATT | ATTGGTGGCA | AAAGTCCAGA | TTCTGGACAC | 480 |
| 55 | GAAGTTGAAC | TAGTTAAAGA | AGAAAGTTAT | TTCTTTAATA | TTAGTAAATA | TACAGACCGT | 540 |
| 56 | TTATTAGAGT | TCTATGACCA | AAATCCAGAT | TTTATACAAC | CACCATCAAG | AAAAAATGAA | 600 |
| 57 | ATGATTAACA | ACTTCATTAA | ACCAGGACTT | GCTGATTTAG | CTGTTTCTCG | TACATCATTT | 660 |
| 58 | AACTGGGGTG | TCCATGTTCC | GTCTAATCCA | AAACATGTTG | TTTATGTTTG | GATTGATGCG | 720 |
| 59 | TTAGTTAACT | ATATTTCAGC | ATTAGGCTAT | TTATCAGATG | ATGAGTCACT | ATTTAACAAA | 780 |
| 60 | TACTGGCCAG | CAGATATTCA | TTTAATGGCT | AAGGAAATTG | TGCGATTCCA | CTCAATTATT | 840 |
| 61 | TGGCCTATTT | TATTGATGGC | ATTAGACTTA | CCGTTACCTA | AAAAAGTCTT | TGCACATGGT | 900 |
| 62 | TGGATTTTGA | TGAAAGATGG | AAAAATGAGT | AAATCTAAAG | GTAATGTTGT | AGACCCTAAT | 960 |
| 63 | ATTTTAATTG | ATCGCTATGG | TTTAGATGCT | ACACGTTATT | ATCTAATGCG | TGAATTACCA | 1020 |
| 64 | TTTGGTTCAG | ATGGCGTATT | TACACCTGAA | GCATTTGTTG | AGCGTACAAA | TTTCGATCTA | 1080 |
| 65 | GCAAATGACT | TAGGTAACTT | AGTAAACCGT | ACGATTTCTA | TGGTTAATAA | GTACTTTGAT | 1140 |
| 66 | GGCGAATTAC | CAGCGTATCA | AGGTCCACTT | CATGAATTAG | ATGAAGAAAT | GGAAGCTATG | 1200 |
| 67 | GCTTTAGAAA | CAGTGAAAAG | CTACACTGAA | AGCATGGAAA | GTTTGCAATT | TTCTGTGGCA | 1260 |
| 68 | TTATCTACGG | TATGGAAGTT | TATAAGTAGA | ACGAATAAGT | ATATTGACGA | AACAACGCCT | 1320 |
| 69 | TGGGTATTAG | CTAAGGACGA | TAGCCAAAAA | GATATGTTAG | GCAATGTAAT | GGCTCACTTA | 1380 |
| 70 | GTTGAAAATA | TTCGTTATGC | AGCTGTATTA | TTACGTCCAT | TCTTAACACA | TGCGCCGAAA | 1440 |
| 71 | GAGATTTTTG | AACAATTGAA | CATAAACAAT | CCTCAATTTA | TGGAATTTAG | TAGTTTAGAG | 1500 |
| 72 | CAATATGGTG | TGCTTACTGA | GTCAATTATG | GTTACTGGGC | AACCTAAACC | TATTTTCCCA | 1560 |
| 73 | AGATTGGATA | | | ATCAAAGAAT | CAATGCAACC | GCCTGCTACT | 1620 |
| 74 | GAAGAGGAAA | | | CCTCAAATTG | ATATTAAAGA | CTTTGATAAA | 1680 |
| 75 | GTTGAAATTA | AGGCAGCAAC | GATTATTGAT | | TTAAGAAGTC | AGATAAGCTT | 1740 |
| 76 | TTAAAAATTC | AAGTAGACTT | •• | CAAAGACAAA | TTGTATCAGG | AATTGCCAAA | 1800 |
| 77 | TTCTATACAC | CAGATGATAT | TATTGGTAAA | | TTGTTACTAA | CCTGAAACCA | 1860 |
| 78 | GCTAAATTAA | TGGGACAAAA | ATCTGAAGGT | ATGATATTAT | | AGATGGTGTA | 1920 |
| 79 | TTAACCTTAG | TAAGTTTACC | AAGTGCAATT | CCAAATGGTG | CAGTGATTAA | ATAA | 1974 |
| 80 | | | | | | | |

(2) INFORMATION FOR SEQ ID NO:2:

85

86

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 657 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

87 88 89

(ii) MOLECULE TYPE: peptide

90 91

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

92 93

94

95

96

97 98

99

 Met Ala Lys Glu Thr Phe Tyr Ile Thr Thr Pro Ile Tyr Tyr Pro Ser

 1
 5
 10
 15

 Gly Asn Leu His Ile Gly His Ala Tyr Ser Thr Val Ala Gly Asp Val
 20
 25
 30

 Ile Ala Arg Tyr Lys Arg Met Gln Gly Tyr Asp Val Arg Tyr Leu Thr
 35
 40
 45

 Gly Thr Asp Glu His Gly Gln Lys Ile Gln Glu Lys Ala Gln Lys Ala

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RAW SEQUENCE LISTING PATENT APPLICATION US/08/785,455

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|------------|--------------|----------|-------|-------|---------------|----------|------------|-------|------------|--------------|------------|----------|------------|----------|----------|--------------|
| 100 | | 50 | | | | | 55 | | | | | 60 | | | | |
| 101 | Gly | Lys | Thr | Glu | Ile | Glu | Tyr | Leu | Asp | Glu | Met | Ile | Ala | Gly | Ile | Lys |
| 102 | 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| 103 | Gln | Leu | Trp | Ala | Lys | Leu | Glu | Ile | Ser | Asn | Asp | Asp | Phe | Ile | Arg | Thr |
| 104 | | | | | 85 | | | | | 90 | | | | | 95 | |
| 105 | Thr | Glu | Glu | Arg | His | Lys | His | Val | Val | Glu | Gln | Val | Phe | Glu | Arg | Leu |
| 106 | | | | 100 | | | | | 105 | | | | | 110 | | |
| 107 | Leu | Lys | Gln | Gly | Asp | Ile | Tyr | | Gly | Glu | Tyr | Glu | _ | Trp | Tyr | Ser |
| 108 | | | 115 | _ | _ | | | 120 | _ | | _ | | 125 | | | _ |
| 109 | Val | | Asp | Glu | Thr | Tyr | | Thr | Glu | Ser | Gln | | Val | Asp | Pro | Gln |
| 110 | | 130 | | | | | 135 | | | _ | | 140 | _ | | | |
| 111 | _ | GLu | Asn | GTÀ | Lys | | Ile | GTÄ | Gly | Lys | | Pro | Asp | Ser | GTÄ | |
| 112 | 145 | | | _ | | 150 | ~7 | -1 | ~ | | 155 | -1 | | -1- | ~ | 160 |
| 113 | GIu | vaı | GIU | Leu | | Lys | GLU | GIU | Ser | _ | Pne | Pne | Asn | тте | | ьуs |
| 114 | | m1 | | | 165 | • | a 1 | nh - | m | 170 | a 1 | . | B | 3 | 175 | T 1 - |
| 115 | Tyr | Thr | Asp | _ | Leu | Leu | GIU | Pne | Tyr | Asp | GIN | ASN | Pro | | Pne | тте |
| 116 | a1 m | Dwa | Dwo | 180 | 3 ~~ ~ | T *** | N a m | a1,, | 185 Met | т1. |) an | N a m | Dho | 190 | T *** | Dro |
| 117 | GIN | Pro | 195 | ser | Arg | ьys | ASII | 200 | мес | тте | ASII | ASII | 205 | тте | гуѕ | PIO |
| 118 119 | <u>ما بر</u> | T 011 | | 7 00 | T 011 | λla | t/al | | Arg | Thr | Sor | Dho | | Ψrn | Cl v | Val |
| 120 | сту | 210 | АТА | ASP | Leu | АТА | 215 | Ser | Arg | 1111 | Ser | 220 | ASII | 115 | сту | vaı |
| 121 | Hic | | Dro | Sar | λen | Dro | | Hie | Val | Val | ጥህጉ | | Trn | Tla | Δsn | λla |
| 122 | 225 | var | FIO | 261 | ASII | 230 | цуз | 1113 | val | Val | 235 | Val | пр | 116 | АЗР | 240 |
| 123 | | Val | Δsn | Tur | Tle | | Δla | T.em | Gly | Tur | | Ser | Asp | Asp | Glu | |
| 124 | 204 | • | no | - 7 - | 245 | 501 | ***** | | 01, | 250 | | | | | 255 | |
| 125 | Leu | Phe | Asn | Lvs | | Trp | Pro | Ala | Asp | | His | Leu | Met | Ala | | Glu |
| 126 | | | | 260 | -1- | | | | 265 | | | | | 270 | | |
| 127 | Ile | Val | Ara | | His | Ser | Ile | Ile | Trp | Pro | Ile | Leu | Leu | | Ala | Leu |
| 128 | | | 275 | | | | | 280 | - | | | | 285 | | | |
| 129 | Asp | Leu | Pro | Leu | Pro | Lys | Lys | Val | Phe | Ala | His | Gly | Trp | Ile | Leu | Met |
| 130 | - | 290 | | | | • | 295 | | | | | 300 | - | | | |
| 131 | Lys | Asp | Gly | Lys | Met | Ser | Lys | Ser | Lys | Gly | Asn | Val | Val | Asp | Pro | Asn |
| 132 | 305 | _ | _ | _ | | 310 | _ | | | | 315 | | | | | 320 |
| 133 | Ile | Leu | Ile | Asp | Arg | Tyr | Gly | Leu | Asp | Ala | Thr | Arg | Tyr | Tyr | Leu | Met |
| 134 | | | | | 325 | | | | | 330 | | | | | 335 | |
| 135 | Arg | Glu | Leu | Pro | Phe | Gly | Ser | Asp | Gly | Val | Phe | Thr | Pro | Glu | Ala | Phe |
| 136 | | | | 340 | | | | | 345 | | | | | 350 | | |
| 137 | Val | Glu | - | Thr | Asn | Phe | Asp | | Ala | Asn | Asp | Leu | | Asn | Leu | Val |
| 138 | | | 355 | _ | | | _ | 360 | | | _ | | 365 | _ | | _ |
| 139 | Asn | _ | Thr | Ile | Ser | Met | | Asn | Lys | Tyr | Phe | - | Gly | GLu | Leu | Pro |
| 140 | | 370 | | | _ | _ | 375 | | _ | _ | | 380 | | | | |
| 141 | | Tyr | GIn | GTÀ | Pro | | His | GLu | Leu | Asp | | GLu | мет | GIU | АТа | |
| 142 | 385 | _ | ~7 | -1. | | 390 | ~ | m | m1 | a 1 | 395 | . | a 1 | ~ | - | 400 |
| 143 | Ата | Leu | GIU | Thr | | ьуs | ser | тyr | Thr | | ser | мет | GIU | ser | | GIN |
| 144 | D1 | ~ | **- 7 | .1. | 405 | a | mb | **- 7 | m | 410 | Db. | T1. | a | 3 | 415 | 3 |
| 145 | rne | ser | vaT | | Leu | ser | TILL | val | Trp | rAg | File | тте | 261, | _ | TILL | ASII |
| 146 | T *** | П | Tl^ | 420 | a1 | mb∽ | ՄԻ∽ | Dro | 425 | บลา | Lou | λla | T tre | 430 | λαν | Ser |
| 147 148 | гуы | TAT | 435 | wsb | GIU | TIIL | IIII | 440 | Trp | val | Ten | WIG | 145 | Asp | нар | SGI |
| 149 | al n | Luc | | Mo+ | Leu | @] v | λen | | Met | Δ 1 = | Hie | T.eu | | Gl.: | Δen | Tla |
| 150 | GTII | 450 | vsh | Mec | Ten | GTA | 455 | val | ME C | vTa | 1112 | 460 | ۷ат | GIU | WO11 | T.T. |
| 151 | Δτα | | Δla | Δla | Val | Leu | | Δra | Pro | Phe | Leu | | His | Δla | Pro | Lvs |
| 152 | 465 | - 1 - | ALU | AIG | , u_ | 470 | LGU | y | | | 475 | | | | 0 | 480 |
| | 100 | | | | | - / 0 | | | | | - , 5 | | | | | |

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RAW SEQUENCE LISTING PATENT APPLICATION US/08/785,455

DATE: 02/21/97 TIME: 15:30:11

INPUT SET: S15668.raw

| | | | | | | | | | | | | | | 1- | U = D | 27. 0200000 |
|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-------------|
| 153 | Glu | Ile | Phe | Glu | Gln 485 | Leu | Asn | Ile | Asn | Asn 490 | Pro | Gln | Ph | Met | Glu 495 | Phe |
| 154 155 | Ser | Ser | Leu | Glu | | Tvr | Glv | Val | Leu | | Glu | Ser | Ile | Met | Val | Thr |
| 156 | | | | 500 | | -1- | 1 | | 505 | | | | | 510 | | , |
| 157 | Gly | Gln | | Lys | Pro | Ile | Phe | | Arg | Leu | Asp | Ser | | Ala | Glu | Ile |
| 158 | | | 515 | | | | | 520 | | | | | 525 | | | |
| 159 | Ala | _ | Ile | Lys | Glu | Ser | | Gln | Pro | Pro | Ala | | Glu | Glu | Glu | Lys |
| 160 | | 530 | | | | | 535 | | | | | 540 | | | | |
| 161 | Glu | Glu | Ile | Pro | Ser | Lys | Pro | Gln | Ile | Asp | Ile | Lys | Asp | Phe | Asp | Lys |
| 162 | 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| 163 | Val | Glu | Ile | Lys | Ala | Ala | Thr | Ile | Ile | Asp | Ala | Glu | His | Val | Lys | Lys |
| 164 | | | | | 565 | | | | | 570 | | | | | 575 | |
| 165 | Ser | Asp | Lys | | Leu | Lys | Ile | Gln | | Asp | Leu | Asp | Ser | | Gln | Arg |
| 166 | | | | 580 | | | | | 585 | | | | | 590 | | |
| 167 | Gln | Ile | | Ser | Gly | Ile | Ala | _ | Phe | Tyr | Thr | Pro | _ | Asp | Ile | Ile |
| 168 | | | 595 | | | | | 600 | | | | | 605 | | | |
| 169 | Gly | Lys | Lys | Val | Ala | Val | | Thr | Asn | Leu | Lys | | Ala | Lys | Leu | Met |
| 170 | | 610 | | | | | 615 | | | | | 620 | | | | |
| 171 | Gly | Gln | Lys | Ser | Glu | Gly | Met | Ile | Leu | Ser | Ala | Glu | Lys | Asp | Gly | Val |
| 172 | 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| 173 | Leu | Thr | Leu | Val | Ser | Leu | Pro | Ser | Ala | Ile | Pro | Asn | Gly | Ala | Val | Ile |
| 174 | | | | | 645 | | | | | 650 | | | | | 655 | |
| 175 | Lys | | | | | | | | | | | | | | | |
| 176 | | | | | | | | | | | | | | | | |
| 177 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |